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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,604	06/23/2003	Ross K. Hill	CANATXX6:CIP	8916
21897	7590	07/10/2009	EXAMINER	
THE MATTHEWS FIRM 2000 BERING DRIVE SUITE 700 HOUSTON, TX 77057			BORISSOV, IGOR N	
			ART UNIT	PAPER NUMBER
			3628	
			MAIL DATE	DELIVERY MODE
			07/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/601,604

Applicant(s)

HILL ET AL.

Examiner

Igor N. Borissov

Art Unit

3628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 14 and 42 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6, 14 and 42 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Amendment received on 04/15/2009 is acknowledged and entered. Claims 7-13, 15-41 have been previously canceled. Claims 1, 2, 14 and 42 have been amended. Claims 1-6, 14 and 42 are currently pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6, 14 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 1 and 14 recite the following limitation: "...a gas purchaser may divert a portion of the gas...", which is confusing. The term "may" expresses a potential capability, not an actual method step. Therefore, it is unclear whether the limitations following the term "may" are part of the claimed invention.

Furthermore, claim 1 recites:

"maintaining the pressure of the natural gas in the pipeline at nominally the same pressure as that of the one or more low pressure underground salt formation storage facilities, such that when the supply of the gas is greater than the demand for the gas, a gas purchaser may divert a portion of the gas in the gas pipeline to the gas storage facility from the gas pipeline and when the demand of the gas is greater than the supply of the gas, the gas purchaser may divert a portion of the gas from the gas storage facility into the gas pipeline;

making at least one short term trade related to natural gas by using the one or more low pressure underground salt formation storage facilities by receiving gas into or providing gas out of the one or more low pressure underground formation storage facilities",

which is confusing, because it is unclear how the purchaser can control the gas before actual purchase of the gas.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kennelley et al. (US 6,298,671 B1) in view of in view of Bishop (US 5,129,759) and further in view of Garnier (US 1,679,417).

Claim 1. Kennelley et al. (Kennelley) teaches a method for storing natural gas in subterranean formation and delivering the gas to a marketplace, comprising:

obtaining storage rights to at least a portion of one or more low pressure underground formation storage facilities (Kennelley discloses at least one low pressure underground salt formation storage facility operating in the pressure range of 200-2500 psi (C. 4, L. 11-17; C. 5, L. 6), thereby suggesting that said storage rights have been obtained);

connecting a natural gas pipeline to the interior of the one or more low pressure underground formation storage facilities, wherein the one or more low pressure underground formation storage facilities operate at pressures in the range of 20 to 80 bars (Kennelley discloses a natural gas pipeline connected with the at least one storage facility having natural gas therein, Fig. 1; C. 4, L. 18-25);

maintaining the pressure of the natural gas in the pipeline at nominally the same pressure as that of the one or more low pressure underground formation storage facilities (Fig. 1; C. 4, L. 18-25);

making at least one short term trade related to natural gas by using the one or more low pressure underground salt formation storage facilities by receiving gas into or providing

gas out of the one or more low pressure underground formation storage facilities (Kennelley teaches a trading system operable for making trades related to gas thereby suggesting making at least one short term trade) (C. 4, L. 55-56).

While Kennelley teaches storing gas in the subterranean formation, Kennelley does not specifically teach that said subterranean formation includes a *salt* formation.

Bishop teaches a method and system for storing natural gas in subterranean formation, wherein said formation is a salt formation (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kennelley et al. to include that said subterranean formation includes a salt formation, as disclosed in Bishop, because it would advantageously allow to utilize subterranean formation of various types, thereby enhance the versatility of the system.

Also, Kennelley and Bishop does not teach that the natural gas is caused to be injected into, and drawn from said storage facility through the same pipe.

Garnier teaches a gas pumping apparatus, wherein the gas is injected into, and drawn from an underground storage facility through the same pipe (Fig 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kennelley et al. and Bishop to include that said natural gas is caused to be injected into, and drawn from said storage facility through the same pipe, as disclosed in Garnier, because it would advantageously allow to save funds by simplifying the structure and avoiding multiple pipes. Furthermore, in this case, each of the elements of the cited references combined by the Examiner performs the same function when combined as it does in the prior art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that said subterranean formation includes a salt formation, as disclosed in Bishop in the system of Kennelley et al., and to include that said natural gas is caused to be injected into, and drawn from said storage facility through the same pipe, as disclosed in Garnier, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable. Thus, such a combination would have yielded predictable results. *See Sakraida*, 425 U.S. at 282, 189 USPQ at 453. Therefore, Supreme Court

Decision in *KSR International Co. v. Teleflex Inc.* (KSR, 82 USPQ2d at 1396) forecloses the argument that a specific teaching, suggestion, or motivation is required to support a finding of obviousness. See the recent Board decision *Ex arte Smith*, –USPQ2d–, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007).

Also, the combination of Kennelley, Bishop and Garnier does not specifically teach that when the supply of the gas is greater than the demand for the gas, a gas purchaser may divert a portion of the gas in the gas pipeline to the gas storage facility from the gas pipeline and when the demand of the gas is greater than the supply of the gas, the gas purchaser may divert a portion of the gas from the gas storage facility into the gas pipeline.

However, the combination does teach the gas storage facility and the gas pipe adapted to divert the gas from the gas storage facility via the pipe to the marketplace.

Therefore, it would have been prima face obvious to one having ordinary skill in the art at the time the invention was made to modify the combination to include said "diverting" feature responsive to the demand of gas for the benefit of fulfilling supplier obligation to provide commodity upon selling said commodity at the marketplace.

Claims 2-6. Kennelley teaches said trading system operable for making trades in gas thereby suggesting making at least one short term trade (C. 4, L. 55-56). As per duration of said short trade, it would have been prima face obvious to one having ordinary skill in the art at the time the invention was made to modify the combination to include any desired time interval, including less than 12 hours for the benefit of adjusting to and accommodating the local market conditions and demand.

Claim 14. Kennelley et al. teaches a system for storing natural gas in subterranean formation and delivering the gas to a marketplace, comprising:

- at least one low pressure underground formation storage facility operating in the pressure range of 200-2500 psi (C. 4, L. 11-17; C. 5, L. 6);

- a natural gas pipeline connected with the at least one storage facility having natural gas therein (Fig. 1; C. 4, L. 18-25);

a trading system operable for making trades related to gas (suggests short trading) (C. 4, L. 55-56);

wherein the use of a computer is old and well known in the art for the benefit of saving time and avoiding possible human mistakes.

While Kennelley et al. teaches storing gas in the subterranean formation, Kennelley et al. does not specifically teach that said subterranean formation includes a salt formation. Also, Kennelley does not teach that the natural gas is caused to be injected into, and drawn from said storage facility through the same pipe.

Bishop teaches a method and system for storing natural gas in subterranean formation, wherein said formation is a salt formation (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kennelley et al. to include that said subterranean formation includes a salt formation, as disclosed in Bishop, because it would advantageously allow to utilize subterranean formation of various types, thereby enhance the versatility of the system.

Garnier teaches a gas pumping apparatus, wherein the gas is injected into, and drawn from an underground storage facility through the same pipe (Fig 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kennelley et al. and Bishop to include that said natural gas is caused to be injected into, and drawn from said storage facility through the same pipe, as disclosed in Garnier, because it would advantageously allow to save funds. Furthermore, in this case, each of the elements of the cited references combined by the Examiner performs the same function when combined as it does in the prior art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that said subterranean formation includes a salt formation, as disclosed in Bishop in the system of Kennelley et al., and to include that said natural gas is caused to be injected into, and drawn from said storage facility through the same pipe, as disclosed in Garnier, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable. Thus, such a combination would have yielded predictable results. See *Sakraida*, 425 U.S. at 282,

189 USPQ at 453. Therefore, Supreme Court Decision in *KSR International Co. v. Teleflex Inc.* (KSR, 82 USPQ2d at 1396) forecloses the argument that a specific teaching, suggestion, or motivation is required to support a finding of obviousness. See the recent Board decision *Ex arte Smith*, --USPQ2d--, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007). Also, the combination does not specifically teach a computer system operable for controlling gas flow into and out of said storage facility. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination to include the use of a computer, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192. Language as to: "*such that when the supply of the gas is greater than the demand for the gas, a gas purchaser may divert a portion of the gas in the gas pipeline to the storage facility from the gas pipeline and when the demand of the gas is greater than the supply of the gas, the gas purchaser may divert a portion of the gas from the storage facility into the gas pipeline*" does not recite structural limitations but rather disclose the intended use of the system. Accordingly, said limitation is not given patentable weight. MPEP 2106 (C) states: "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation."

Claim 42. Same reasoning as applied to claim 1.

Response to Arguments

Applicant's arguments filed 04/15/2009 have been fully considered but they are not persuasive.

In response to applicant's argument that Kennelley fails to disclose connection of a natural gas pipeline directly to a low pressure underground salt formation storage facility, the natural gas pipeline having a pressure nominally identical to that of the storage facility, such that through modification of the pressure in the pipeline, gas can be provided into or removed

from the storage facility commensurate with supply and demand, it is noted that Kennelley discloses a low pressure underground formation storage facility operating in the pressure range of 200-2500 psi (C. 4, L. 11-17; C. 5, L. 6); a natural gas pipeline connected with the at least one storage facility having natural gas therein (Fig. 1; C. 4, L. 18-25); and a pipe system including a commercial pipeline system for delivering gas to a trading system operable for making trades related to gas (suggests short trading) (C. 4, L. 38-44; 55-56). As per "providing into or removing from" feature, Garnier was applied to show injecting gas into, and drawing from an underground storage facility through the same pipe (Fig 1).

In response to applicant's argument that Kennelley fails to disclose conducting short term trades in gas using relative pressures between a pipeline and one or more low pressure underground salt formation storage facilities, it is noted that Kennelley teaches said trading system (marketplace) operable for making trades in gas thereby suggesting making at least one short term trade (C. 4, L. 55-56). As per utilizing relative pressures between a pipeline and one or more low pressure underground salt formation storage facilities per se, see reasoning provided above.

In response to applicant's argument that Bishop does not teach connection of a natural gas pipeline directly to a low pressure underground salt formation storage facility, the natural gas pipeline having a pressure nominally identical to that of the storage facility, such that through modification of the pressure in the pipeline, gas can be provided into or removed from the storage facility commensurate with supply and demand, it is noted that Bishop was applied to show that said underground formation is a salt formation. As per remaining features, Garner discloses an arrangement for storing natural gas in underground formation wherein a single pipe is utilized for injecting the gas into and drawing the gas from said cavern (See the discussion above).

In response to applicant's argument that Bishop does not teach a system or method for conducting short term trades in gas using relative pressures between a pipeline and

one or more low pressure underground salt formation storage facilities, it is noted that Kennelley was applied for "trading" feature.

To this end Examiner points out that applicant's arguments are directed against the references individually; but one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that the combination of Kennely, Bishop, and Gamier is improper because the proposed combination would render one or more items of the art of record non-functional for their intended purposes, it is noted that Kennely, Bishop, and Gamier belong to the same field of endeavor. Each reference relate to storing gas in the underground storage facility and delivering gas to or from said storage facility. Bishop discloses that said storage facility is a salt formation, and Gamier discloses certain piping arrangement. All elements when combined merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable. Thus, such a combination is proper and would have yielded predictable results. See *Sakraida*, 425 U.S. at 282, 189 USPQ at 453.

The remaining applicant's arguments essentially repeat the arguments presented above; therefore, the responses presented by the examiner above are equally applicable to the remaining applicant's arguments.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Igor Borissov whose telephone number is 571-272-6801. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Hayes can be reached on 571-272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Igor N. Borissov/

Primary Examiner, Art Unit 3628

07/09/2009